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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Sreekanth Voleti et al.

Title: PROCESS CONTROL BUS MONITORING AND ANALYSIS

Docket No.: H0001602-0760

Serial No.: 09/849,916

Filed: May 4, 2001

Due Date: September 25, 2005

Examiner: Lohn, Joshua A.

Group Art Unit: 2114

MS AF

Commissioner for Patents

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(GENERAL)



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Sreekanth Voleti et al. Examiner: Lohn, Joshua A.

Serial No.: 09/849,916 Group Art Unit: 2114

Filed: May 04, 2001 Docket: H0001602-0760

For: PROCESS CONTROL BUS MONITORING AND ANALYSIS

APPEAL BRIEF UNDER 37 CFR § 41.37

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
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Sir:

The Appeal Brief is presented in support of the Notice of Appeal to the Board of Patent Appeals and Interferences, filed on July 21, 2005, from the Final Rejection of claims 1-16 and 18-23 of the above-identified application, as set forth in the Final Office Action mailed on April 21, 2005.

The Commissioner of Patents and Trademarks is hereby authorized to charge Deposit Account No. 19-0743 in the amount of \$500.00 which represents the requisite fee set forth in 37 C.F.R. § 41.2(b)(2). The Appellants respectfully request consideration and reversal of the Examiner's rejections of pending claims.

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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1. REAL PARTY IN INTEREST

The real party in interest of the above-captioned patent application is the assignee,
HONEYWELL INTERNATIONAL INC..

2. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant that will have a bearing on the Board's decision in the present appeal.

3. STATUS OF THE CLAIMS

The present application was filed on May 4, 2001 with 23 claims. All claims are currently pending. Claim 17 was indicated as allowable. Claims 1-16 and 18-23 were rejected in a Final Office Action mailed April 21, 2005.

4. STATUS OF AMENDMENTS

No amendments have been made subsequent to the Final Office Action dated April 21, 2005.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The present application addresses the problem of a user interpreting fields of data from frames on a control bus. The fields are usually expressed in a numerical or binary format, which is interpreted by a user, using a manual or other related documents as described on page 1 of the application. This is cumbersome, and assumes that the user has access to the manual. Claim 1 recites a computer implemented method of analyzing frames on a process control bus 115, page 4, lines 1-5. A frame is selected to be analyzed (215, page 6, lines 19-23), and a text file (page 6, lines 11-18) is used to identify function code formats (page 6, line 19 – page 7, line 35). Values for fields are calculated (Page 7, lines 36-39) based on the function code formats.

Claim 6 depends from claim 1 and further recites calculating values for fields based on the function code formats comprises finding a value in the frame and matching it to a corresponding verbal description from the text file. The text file provides information that is readily understandable by a user to help in understanding information in the frames (Page 7, lines 36-39, page 8, lines 20-23).

Independent claim 7 is similar to claim 1, but cast in a computer readable medium form.

Independent claim 10 recites a system (300, page 15, lines 14-19) for interpreting packets on a process control bus. A communication module (320, page 15, lines 16-17) may be coupled to the process control bus. A receive queue (353, page 15, lines 22-25) receives a frame from the communication module. A receive module (355, page 15, lines 23-25) compares records in the frame with records in an interpretation file (365, page 15, lines 24-30) to provide a user viewable interpretation (page 16, lines 1-9) of the frame.

Claim 14 depends from claim 10, and further describes an interpretation editor (370, page 15, lines 26-30) for modifying the interpretation files.

Claim 15 depends from claim 10, and describes that the interpretation file comprises a text file having information (page 6, lines 11-18, page 7, line 36 to page 15, line 19, and page 15, lines 26-30) about data packets moving on the control bus.

Claim 16 depends from claim 15 and further recites that the text file comprises identifications of function codes (page 6, lines 19-29 and page 7, starting at line 3) and information regarding the interpretation of such function codes.

Independent claim 21 describes a system (300, page 15, lines 14-19) for interpreting packets on a process control bus. A receive queue (353, page 15, lines 22-25) receives packets of data in frames on the process control bus. An interpretation file (365, page 15, lines 24-30) is used by a receive module (355, page 15, lines 23-25) to compare records in the frame with records in the interpretation file to provide a user viewable interpretation of the frame. The receive module generates a user viewable screen of information describing the frames (FIG.s 4-7, page 16 line 1 to page 17, line 5), and comprising a pane (445) for each selected frame that identifies interpretations (page 16, lines 20-23) of fields in the frame.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-16 and 18-23 were rejected under 35 USC § 102(b) as being unpatentable over Henrikson (U.S. Patent No. 5,923,673).

7. ARGUMENT

A) The Applicable Law

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. *In re Dillon* 919 F.2d 688, 16 USPQ 2d 1897, 1908 (Fed. Cir. 1990) (en banc), cert. denied, 500 U.S. 904 (1991). It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, “[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added).

Although, during examination the claims must be interpreted as broadly as their terms reasonably allow, that interpretation must be tempered by the context in which the term is used. The court in Hyatt stated that “during examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification.” *In re Hyatt*, 211 F.3d 1367, 1372, 54 U.S.P.Q.2D (BNA) 1664, 1667 (Fed. Cir. 2000) (emphasis added) (“During examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification.” ; citing *In re Graves*, 69 F.3d 1147, 1152, 36 U.S.P.Q.2D (BNA) 1697, 1701 (Fed. Cir. 1995); *In re Etter*, 756 F.2d 852, 858, 225 U.S.P.Q. (BNA) 1, 5 (Fed. Cir. 1985) (en banc)).

As recited in MPEP § 2112, “In relying upon the theory of inherency, the examiner must provide basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art,” citing Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

B) Discussion of the rejection of Claims 1-16 and 18-23 under 35 USC § 102(b) as being unpatentable over Henrikson (U.S. Patent No. 5,923,673).

Claims 1-16 and 18-23 were rejected under 35 USC § 102(b) as being unpatentable over Henrikson (U.S. Patent No. 5,923,673). This rejection is respectfully traversed. Apellant respectfully submits that the Final Office Action has made an improper *prima facie* showing of anticipation at least because Henrikson fails to disclose one or more elements of the claims.

The Office Action purports to give a broadest reasonable interpretation of the claims. The interpretations given are respectfully traversed, as they are not believed reasonable in light of the claim language and specification. Further, Henrikson does not describe the identical invention in as complete detail as is contained in the claims.

The present application describes the ability to provide interpretations of numerical and binary based packets or fields in communications on a bus. Such packets or fields are difficult to read and require the use of a manual to interpret. By having a text file with descriptions used to provide a verbal description to the user, trouble shooting is made much easier. The reference, Henrikson, uses filters to capture selected communications on a bus. The filters are not used to provide interpretations of captured packets, but merely to select which packets to provide to a user for viewing. Nothing in Henrikson discusses providing interpretations to a user to help in figuring out what the information in a packet means.

One major difference, is that in the present claims, the frame is selected, and then the text file is used to identify function code formats and calculate values for fields. In Henrikson, the filters are first selected, and then the frames are selected based on the filters. Henrikson does not use text file after the frames have already been selected as claimed.

Claim 1, describes using a text file to identify function code formats, and to calculate values for fields of a frame based on the function code formats. The Office Action indicates that Henrikson uses “a text file to identify function code formats at Col. 5, lines 11-25, where providing the user choices would involve some text based user readable file that is then used to indicate a function code for related events)”. The cited language only describes the use of a user interface to allow the user to select trigger events, and select captured data for display and storage. Providing user choices in

Henrikson relates to setting up a filter to obtain data, not to help a user interpret selected data. There is no identification of function code formats of a selected frame as claimed, nor use of a text file to identify them. First, the Office Action uses the phrase “would involve some text based user readable file...” The language “would involve” is very weak, at best implying inherency or official notice. Neither has been properly established. Second, trigger events are not the same as function code formats. Function code formats describe the format of fields in a frame as such term is used in the claim and described in the specification. They help a user understand what the captured frame information means without having to resort to a manual to decode the frames. Henrikson simply does not use a text file in the same manner as that described in claim 1. Since Henrikson lacks at least one element of claim 1, the rejection should be withdrawn.

The Office Action also indicates that Henrikson, col. 5, lines 35-47 describe “...digital codes indicate events to be captured by filters that then calculate field values).” This assertion is respectfully traversed. The cited language makes no reference to the calculation of field values. In fact, the cited language of Henrikson merely indicates that the filter is used to capture response retry timeout errors, and capture the error transmission and bytes after such transmission. No calculation of values for fields is mentioned or implied. Thus, even an overly broad interpretation of the claim language is not met by Henrikson, and the rejection should be withdrawn.

In the response to arguments section of the Final Office Action, the Examiner states that “Henrikson discloses the creation of filters based upon the selected events, or function code formats selected from the text list (Henrikson, col. 56, lines 29-47). These filters are interpreted to be the fields of the currently claimed invention. They are calculated based upon the function code formats provided by the user selections mentioned above.” These statements are difficult for Applicant and one of average skill in the art to understand. In Henrikson, a filter is not calculated, but rather is selected or specified. A filter does not calculate in Henrikson, it is merely used to identify data, such as the response retry timeout errors, which are then captured. It is also believed unreasonable to interpret filters as fields of a frame. It is possible that a filter may identify data to search for in a frame, but that is quite different from calculating a value

for fields based on the function code formats as claimed. No one of average skill in the art would interpret it as such.

Claim 2 recites providing the values of the fields to a display. The Office Action indicates that Henrikson does so at col. 5, lines 57-59. Since the values in claim 2 are calculated, and Henrikson does not describe the calculation of values, no such values are provided by Henrikson, and the rejection should be withdrawn.

Claim 6 further describes matching a value in the frame to a verbal description from the text file. This further illustrates one purpose of the presently claimed invention. One purpose is to provide explanations of fields to users so a user does not have to resort to a user manual to interpret bus traffic. Henrikson, by using filters, approaches analysis from a different angle, that of trying to cull out specific traffic identified by the filters. It does not use text files to explain about fields in frames, but uses a menu to help select filters to capture desired bus traffic. This is a completely different approach to monitoring bus traffic, and the claims clearly distinguish from Henrikson by providing descriptions about particular fields of a selected frame.

Claims 10-23 provide further details about how information is provided to help a user interpret fields or records in a frame. Claims 10-23 specifically refer to using an interpretation file, and the provision of a user viewable interpretation of the frame by using records in the interpretation file. The Examiner states that Henrikson discloses a system for interpreting packets on a process control bus. This statement is respectfully traversed. Henrikson captures communications. It does not help with interpreting packets, but allows a user to analyze and record the data communications. The present invention as claimed in claims 10-23, actually provides a viewable interpretation of the frame. Henrikson filters communications to provide the user a list of them that meet the filter requirements. This is not an interpretation of a frame as used in the claims, as it is not a user viewable interpretation of a frame, but rather a list of communications that meet the filter criteria. One major difference, is that in the present claims, the frame is selected, and then the interpretation file is used to provide a user viewable interpretation of the frame. In Henrikson, the filters are first selected, and then the frames are selected

based on the filters. Henrikson does not use in interpretation file after the frames have already been selected.

The Office Action indicates that Henrikson discloses an interpretation file at col. 5, lines 11-25, "where trigger selections and associated digital data act as an interpretation file". An interpretation file, as understood to those of skill in the art and in the context of the present application, aid in interpretation of information as described on page 16, lines 8-9 of the present application: "interpretation for the frames that are moving on the bus." Again, Henrikson does not describe anything regarding interpretation of frames, it merely compares information in a communication to information in a filter to see if it matches.

The Examiner also equates trigger selections and associated digital data to an interpretation file. This is believed an unreasonably broad interpretation of both the elements of Henrikson and the current claim language. The Examiner was requested to provide a reference supporting such interpretations, as it is believed outside the interpretation of one of ordinary skill in the art. Further, the Examiner indicates that Henrikson at col. 5, lines 35-67 provides a user viewable interpretation of the frame. Further, the Examiner states that "The interpretation would provide the information corresponding to the filters that were set through the use of function code formats described above." This is respectfully traversed. While the filters would appear to cull out messages corresponding to the filters, there is no interpretation of fields that is provided to the user, only a set of data corresponding to the filter. A user still would have to resort to a manual to interpret the meaning of fields in the data. The claim language appears to be taken outside the context of the application, and ignores the meaning of the interpretation file and a viewable interpretation of the frame. Such an interpretation describes the fields of the frame in a manner that saves a user from having to resort to a manual to decode the meaning of the fields and values within the fields of frames.

With respect to claim 12, the Examiner indicates that "it is inherent that the destination of each is provided for each packet and acts as a slave identifier." Inherency requires that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. It is not necessary that the specification of a destination indicate a

slave identification as claimed. The specification of a destination could simply correspond to an address, which does not inherently identify a device as a slave. Thus, since the allegedly inherent characteristic does not necessarily flow from the teachings of the applied prior art, the rejection should be reversed.

Claim 14 includes an interpretation editor for modifying the interpretation files. This element is indicated as being shown in Henrikson at col. 5, lines 11-25, "where the user selections act as an editor for modifying the interpretation files." This line of reasoning by the Examiner continues the thought that a filter is the same as an interpretation file. This is respectfully traversed. The interpretation file is clearly defined as something that helps a user understand cryptic fields in a frame. A filter is an entirely different construct. The language cited in Henrikson clearly highlights that the filters are used to "select captured data for display" not to help in interpreting what the data means.

Claim 15 further refines the interpretation file of claim 14 as having information about data packets moving on the control bus. A filter in Henrikson does not have information about specific data on the bus, but rather contains data that is desired to be found in data on the bus. It does not provide information about a specific data packet on the bus as claimed.

Claim 16 depends from claim 15, and further specifies that the text file comprises identification of function codes and information regarding the interpretation of such function codes. The Examiner indicates that Henrikson at col. 5 lines 11-25 describe trigger events that "represent function codes that are translated into digital data representations." The cited language appears to be somewhat the reverse of the present claims. It calls for the selection by a user of trigger events to select captured data for display. "The system translates the selected trigger event into a predetermined sequence of digital data. Once data is captured, that data is stored in the internal memory 24 and displayed under user command on the user interface." Col. 5, lines 19-22. Events are used to select the data. The events are translated, not the data. The claims call for the selection of frames, then the interpretation of the frames. Henrikson does not appear to interpret the data from the bus, but does translate the events that are used to find the data

on the bus. This is quite different from the claims, and clearly does not anticipate the claims.

Independent claim 21 distinguishes the reference for at least the same reasons as claim 10. In addition, claim 21 recites providing a user viewable screen of information describing the frames and a pane for each selected frame that identifies interpretations of fields in the frame. The Examiner indicates that Henrikson describes such at col. 8, lines 7-28, and col. 5 lines 57 through col. 6, line 14. Applicant has reviewed this language, and only finds that a user can display or store the results of the search. There is no indication of a pane for each selected frame as claimed, and there is no provision of interpretations of fields in the frame as claimed. Since multiple elements are lacking from Henrikson, a proper *prima facie* case of anticipation has not been established, and the rejection should be withdrawn.

Because Henrikson fails to teach each and every element of the claims, Appellant respectfully requests reversal of the § 102(b) rejections.

8. SUMMARY

For the reasons argued above, claims 1-16 and 18-23 were not properly rejected under § 102(b) as being unpatentable over Henrikson.

It is respectfully submitted that the art cited does not render the claim anticipated and that the claims are patentable over the cited art. Reversal of the rejection and allowance of the pending claim are respectfully requested.

Respectfully submitted,
SREEKANTH VOLETI et al.
By their Representatives,
SCHWEGMAN, LUNDBERG,
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P.O. Box 2938
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Date 9/26/2005 By Bradley A. Forrest
Bradley A. Forrest
Reg. No. 30,837

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Appeal Brief, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 26th day of September, 2005.

Dawn M. Poole Dawn M. Poole
Name Signature

CLAIMS APPENDIX

1. (Rejected) A computer implemented method of analyzing frames on a process control bus, the method comprising:
 - selecting a frame to be analyzed;
 - using a text file to identify function code formats; and
 - calculating values for fields based on the function code formats.
2. (Rejected) The method of claim 1 and further comprising providing the values of the fields to a display.
3. (Rejected) The method of claim 1 and further comprising reading data from a text file prior to selecting a frame.
4. (Rejected) The method of claim 3 and further comprising storing data from the text file in a data structure.
5. (Rejected) The method of claim 4 and further comprising searching for a matching record for the frame in the data structure.
6. (Rejected) The method of claim 1 wherein calculating values for fields based on the function code formats comprises finding a value in the frame and matching it to a corresponding verbal description from the text file.
7. (Rejected) A computer readable medium having instructions stored thereon to cause a computer to implement a method of analyzing frames on a process control bus, the method comprising:
 - selecting a frame to be analyzed;
 - using a text file to identify function code formats; and

-
- calculating values for fields based on the function code formats.
8. (Rejected) The computer readable medium of claim 7, wherein the method further comprises providing the values of the fields to a display.
9. (Rejected) The computer readable medium of claim 7, wherein the method further comprises reading data from a text file prior to selecting a frame.
10. (Rejected) A system for interpreting packets on a process control bus, the system comprising:
- a communication module for coupling to the process control bus;
 - a receive queue that receives a frame from the communication module;
 - an interpretation file; and
 - a receive module that compares records in the frame with records in the interpretation file to provide a user viewable interpretation of the frame.
11. (Rejected) The system of claim 10 and further comprising a statistics module coupled to the receive queue for generating statistics regarding frames received from the process control bus.
12. (Rejected) The system of claim 11 wherein the statistics provide information selected from the group consisting of function codes, number of frames, errors, master identification and slave identification.
13. (Rejected) The system of claim 10 and further comprising a data link layer that identifies packets of data in frames.
14. (Rejected) The system of claim 10 and further comprising an interpretation editor for modifying the interpretation files.

15. (Rejected) The system of claim 10 wherein the interpretation file comprises a text file having information about data packets moving on the control bus.

16. (Rejected) The system of claim 15 wherein the text file comprises identifications of function codes and information regarding the interpretation of such function codes.

17. (Allowed) The system of claim 16 wherein the function codes are selected from the group consisting of power exhaust status, Enthalpy configuration, call for cooling, fan state, Enthalpy control, Enthalpy mode, shutdown, baud rate, slave address and reserved.

18. (Rejected) The system of claim 10 and further comprising means for converting an interpretation file into structured records a data structure for use by the receive module in interpreting frames.

19. (Rejected) The system of claim 10 and further comprising a log file coupled to the interpretation file, wherein the log file contains data received from the control bus.

20. (Rejected) The system of claim 19 and further comprising an offline viewer coupled to the log files and interpretation file that interprets data packets in frames.

21. (Rejected) A system for interpreting packets on a process control bus, the system comprising:

a receive queue that receives packets of data in frames on the process control bus;
an interpretation file; and

a receive module that compares records in the frame with records in the interpretation file to provide a user viewable interpretation of the frame, wherein the receive module generates a user viewable screen of information describing the frames, and comprising a pane for each selected frame that identifies interpretations of fields in the frame.

22. (Rejected) The system of claim 21 and further comprising a screen for configuring and setting options for monitoring frames on the process control bus.

23. (Rejected) The system of claim 21 and further comprising a statistics screen.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.